

**CLAIMS**

1. A multiplexing apparatus for multiplexing one or more coded streams with other information, the coded streams including coded pictures in a unit of a randomly-accessible access unit, said  
5 multiplexing apparatus comprising:

a coding unit operable to generate the coded streams so that no gap occurs at a connection of predetermined two access units in a process of decoding, in sequence, the two access units in all of access units included in the coded streams; and

10 a multiplexing unit operable to multiplex, with the other information, the coded streams generated by said coding unit.

2. The multiplexing apparatus according to Claim 1,

wherein said coding unit is operable to generate the coded  
15 streams so that delay amounts in the two access units become equal to each other, each of the delay amounts being a time lag from when a top picture in a decoding order is decoded to when a top picture in a display order is displayed.

20 3. The multiplexing apparatus according to Claim 2, further comprising

a delay information generation unit operable to generate delay information concerning the delay amounts,

wherein said multiplexing unit is operable to multiplex, with  
25 the other information, the delay information generated by said delay information generation unit.

4. The multiplexing apparatus according to Claim 3,

wherein said delay information generation unit is operable to  
30 generate the delay information indicating the delay amounts.

5. The multiplexing apparatus according to Claim 3,

wherein said delay information generation unit is operable to generate, as the delay information, a flag indicating that the two access units can be connected seamlessly.

- 5 6. The multiplexing apparatus according to Claim 2,  
wherein said coding unit is operable to generate the coded streams so that no gap occurs at a connection of the two access units in all of the access units included in the coded streams, the connection being an angle changeable point.

10

7. A demultiplexing apparatus for demultiplexing multiplexed data,

wherein the multiplexed data includes: ( i ) coded streams including coded pictures in a unit of a randomly-accessible access unit; and ( ii ) delay information concerning delay amounts in  
15 predetermined two access units in all of access units, each of the delay amounts being a time lag from when a top picture in a decoding order is decoded to when a top picture in a display order is displayed, and

20

said demultiplexing apparatus comprises:

a delay information demultiplexing unit operable to demultiplex the multiplexed data to obtain the delay information; and

a playback unit operable to decode and play back the access  
25 units in sequence according to the delay information obtained when said delay information demultiplexing unit has demultiplexed the multiplexed data.

8. Multiplexed data comprising:

30

one or more coded streams including coded pictures in a unit of a randomly-accessible access unit; and  
other information,

wherein said coded streams are made up so that no gap occurs at a connection of predetermined two access units in a process of decoding, in sequence, the two access units in all of access units included in the coded streams.

5

9. Multiplexed data comprising

coded streams which are made up so that delay amounts in predetermined two access units become equal to each other, each of the delay amounts being a time lag from when a top picture in a decoding order is decoded to when a top picture in a display order is displayed.

10

10. Multiplexed data comprising delay information concerning delay amounts as other information.

15

11. A multiplexing method for multiplexing one or more coded streams with other information, the coded streams including coded pictures in a unit of a randomly-accessible access unit, said multiplexing method comprising:

20

generating the coded streams so that no gap occurs at a connection of predetermined two access units in a process of decoding, in sequence, the two access units in all of access units included in the coded streams; and

multiplexing the coded streams generated in said generating with the other information.

25

12. A demultiplexing method for demultiplexing multiplexed data, wherein the multiplexed data includes: ( i ) coded streams including coded pictures in a unit of a randomly-accessible access unit; and ( ii ) delay information concerning delay amounts in predetermined two access units in all of access units, each of the delay amounts being a time lag from when a top picture in a

30

decoding order is decoded to when a top picture in a display order is displayed, and

said demultiplexing method comprises:

demultiplexing the multiplexed data to obtain the delay  
5 information from; and

decoding and playing back the two access units in sequence according to the delay information obtained in said demultiplexing.

13. A program for multiplexing one or more coded streams with  
10 other information, the coded streams including coded pictures in a unit of a randomly-accessible access unit, said program causing a computer to execute a multiplexing method that includes:

generating the coded streams so that no gap occurs at a connection of predetermined two access units in a process of  
15 decoding, in sequence, the two access units in all of access units included in the coded streams; and

multiplexing the coded streams generated in said generating with the other information.

20 14. A program for demultiplexing multiplexed data, wherein the multiplexed data includes: ( i ) coded streams including coded pictures in a unit of a randomly-accessible access unit; and ( ii ) delay information concerning delay amounts in predetermined two access units in all of access units, each of the  
25 delay amounts being a time lag from when a top picture in a decoding order is decoded to when a top picture in a display order is displayed, and

said program comprises:

demultiplexing the multiplexed data to obtain the delay  
30 information; and

decoding and playing back predetermined two access units in sequence according to the delay information obtained in said

demultiplexing.

15. A recording medium recording a program for multiplexing one or more coded streams with other information, the coded streams  
5 including coded pictures in a unit of a randomly-accessible access unit,

wherein said program causes a computer to execute:

generating the coded streams so that no gap occurs at a connection of predetermined two access units in a process of  
10 decoding, in sequence, the two access units in all of access units included in the coded streams; and

multiplexing the coded streams generated in said generating with the other information.

15 16. An integrated circuit for multiplexing one or more coded streams with other information, the coded streams including coded pictures in a unit of a randomly-accessible access unit, said integrated circuit comprising:

a coding unit operable to generate the coded streams so that  
20 no gap occurs at a connection of predetermined two access units in a process of decoding, in sequence, the two access units in all of access units included in the coded streams; and

a multiplexing unit operable to multiplex, with the other information, the coded streams generated by said coding unit.